2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0125258 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF GE(IV) WITH 3,5-DINITROPYROCATECHOL (L) WAS STUDIED SPECTROPHOTOMETRICALLY AND POTENTIOMETRICALLY. AT A GE:L CONCN. RATIO OF 1:3, A COMPLEX FORMED WHICH HAD PROPERTIES OF A STRONG DIBASIC ACID WITH A 2ND IONIZATION CONST. OF (1.24 PLUS OR MINUS 0.10) TIMES 10 PRIME NEGATIVE2. THE INSTABILITY CONST. OF THE COMPLEX IS (1.42 PLUS OR MINUS 0.29) TIMES 10 PRIME NEGATIVE48. AT IONIC STRENGTH 0.1 AND 25PERCENT, THE IONIZATION CONSTS. OF L ARE: K SUB1 EQUALS 4.1 TIMES 10 PRIME NEGATIVE4 AND K SUB2 EQUALS 9.3 TIMES 10 PRIME NEGATIVE11. FACILITY: INST. OBSHCH. NEORG. KHIM., KIEV, USSR.

UNCLASSIFIED

Acc. Nr. AP0049533 Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code UR0227

102973y Corrosion protection of metallic structures. Vinarskii, V. L. (USSR). *Prom. Stroit.* 1970 (1), 39–40 (Russ). Substitution of sand blasting with phosphating treatment of steel surface before applying a perchlorovinyl resin coating provides equal corrosion protection in corrosive atms., but has certain neg. features leaving sand blasting as the best surface-prepn. method.

John D. Gat

REEL/FRAME
19801400

USSR

UDC [537.226+537.311.33].01

VINETSKIY, V. L., ITSKOVSKIY, M. A., and KUKUSHKIN, L. S.

"Interaction of Conduction Electron With Transverse and Longitudinal Optical Vibrations in Ionic Crystals"

Vzaimodeystviye elektrona provodimosti s poperechnymi i prodol'nymi opticheskimi kolebaniyami v ionnykh kristallakh (cf. English above, Physics Institute, Academy of Sciences Ukrainian SSR, No 2), Kiev, 1971, 16 k., rotaprint (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1058)

Translation: The article considers the interaction of conduction electrons with vibrations in ionic crystals which have an isolated type of transverse optical vibrations (e.g., "soft" mode in perovskite ferroelectrics, doubly degenerate mode of transverse optical vibrations in diatomic alkali-halide crystals). At the same time, for purposes of comparison the same method is used to study the interaction with longitudinal optical vibrations, a precision study being made of the crystal lattice (so-called lattice model in which interaction with the internal field created by longitudinal and transverse vibrations can be taken into account, in contrast to the continuum model where only interaction with the macroscopic field of longitudinal vibrations is taken into consideration). On the basis of the model of polarizable ions, the authors consider the

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USSR

VINETSKIY, V. L., et al., Vzaimodeystviye elektrona provodimosti s poperechnymi i prodol'nymi opticheskimi kolebaniyami v ionnykh kristallakh, Kiev, 1971

Hamiltonian of the interaction of the "superfluous" electron with both longitudinal and transverse optical vibrations. From the form of the "transverse" Hamiltonian it follows that there is no interaction with transverse vibrations for crystals with minimum energy at the center of the Brillouin zone. An analysis is made of limiting cases where interaction with optical vibrations can be regarded as perturbation (case of a weak bond) and where it is great (case of a strong bond).

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USSR

UDC: 537.2.222

VINETSKIY, V. L., and KUKHTAREV, N. V.

"Solving the Poisson Equation for a Periodic Distribution of a Static Charge"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 17, No 2, 1972, pp 334-338

Abstract: The Poisson equation that must usually be solved in handling actual problems in the physics of semiconductors is of the form

$$\lambda\Phi''_{yy} = F(y) - e^{-\Phi},$$

where $\Phi = e\varphi/kT$, φ is the electrostatic potential in a crystal having a static charge eN, N(x) is the unidimensional impurity distribution with a period d, y = x/d. A periodic solution for this equation is found, although the solution is not exact but approximate, being based on the condition, usually realized in practice, that $\lambda \ll 1$. Under this condition, the equation is a nonanalytic function of λ and has a singularity for $\lambda \to 0$; hence, the standard small-parameter method is inapplicable. For other conditions, alternative methods are proposed. The authors express their gratitude to A. B. Vasil'yeva for her advice.

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USSR

VINETSKIY, V. L.; ITSKOVSKIY, M. A.; KUKUSHKIN, L. S. (Institute of Physics, Ukrainian Academy of Sciences, Kiev)

"Interaction of a Conduction Electron with Transverse Optical Oscillations in Ionic Crystals"

Leningrad, Fizika Tverdogo Tela; January, 1971; pp 76-86

ABSTRACT: The Hamiltonian of the interaction of a conduction electron with longitudinal and transverse optical oscillations of a lattice of polarized ions is expressed through static and high-frequency permittivity.

It was shown that for crystals with a minimum of energy in the center of the Brillouin zone interaction with transverse oscillations is absent. For the case of several minima in the zone, the authors calculated the electron mobility with scattering by transverse optical oscillations ($\mu_\perp$), comparable with mobility with scattering by longitudinal oscillations $\mu_\parallel$ for crystals with ordinary values of ε_o and ε_∞ and playing a basic role, as in ferroelectrics, with large values of the static permittivity of ε_o. Comparison of the theoretical mobility

USSR

VINETSKIY, V.L., et al, Fizika Tverdogo Tela; January 1971; pp 76-86

$\mu_\perp$ with the experimental for barium titanate ($BaTiO_3$) explains the so-called "positive-temperature drag effect" in the region of phase transition; also obtained was the approximate quantitative agreement of the theoretical mobility with the experimental.

When the interaction with transverse optical oscillations in the zero approximation of the theory is taken into account, the corresponding polaron functional is obtained, an analysis of which shows that in crystals a "transverse" polaron only of small radius is possible; the contribution of transverse oscillations to a "longitudinal" polaron in macroscopic theory is nogligible.

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USSR

UDC 537.311.33:514.28

KONOZENKO, I.D., VINETSKIY, V.L., VARENTSOV, M.D., YERITSYAN, G.N., SEMENYUK, A.K., STARCHIK, M.I., KHIVRICH, V.I.

"Effect Of Certain Factors On The Processes Of Formation Of Radiation Defects In Silicon And Germanium During Gamma Irradiation"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Non-Metallic Crystals--Collection Of Works), Minsk, "Nauka i tekhn.," 1970, pp 22-44 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B26)

Translation: The kinetics are studied of the buildup of radiation defects in Si and n- and p-type Ge during Gamma irradiation. The effect of the charge state and temperature on the formation of recombination centers is considered as well as the effect of dosage, the intensity of Gamma irradiation, concentration, preliminary irradiation and other factors on the formation of radiation defects. 32 ref. V.B.

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USSR

UDC 535.215.1

KHOLODAR', G.A., VINETSKIY, V.L.

"Evolution Of Spectra Of Photoconductivity Of p-Silicon After Irradiation By Gamma Quanta And Electrons"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Nonmetal Crystals--Collection Of Works), Minsk, "Nauka i tekhn.,"1970, pp 67-70 (from RZh--Elektronika i yeye primeneniye , No 1, Jamuary 1971, Abstract No 1B247)

Translation: The spectra were investigated of the photoconductivity of specimens of p-Silicon after irradiation by gamma quanta Co^{60} and electrons with an energy close to threshold. The form of the spectra and its stability in time (after irradiation) and during heating depend very strongly on the energy of the defect generating particles. This dependence agrees qualitatively with the assumption of the presence in the crystal after irradiation of a set of Frenkel genetic pairs with a different distance between its components. 2 ill. 2 ref. Summary.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--GENETIC ANALYSIS OF ULTRAVIOLET LESIONS OF PHAGE TRANSFORMING DNA RII PRIME POSITIVE MARKERS. I. SIZE OF THE REGION FOR THE HOMOLOGOUS

AUTHOR-(03)-ALEKSANDROVA, N.M., VARTANYAN, R.G., VINETSKIY, YU.P.

COUNTRY OF INFO--USSR

SOURCE--GENETIKA 1970, 6(3), 97-109

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, UV RADIATION BIOLOGIC EFFECT, ESCHERICHIA COLI, CELL PHYSIOLOGY, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1139 STEP NO--UR/0473/70/006/003/0097/0109

CIRC ACCESSION NO--AP0130167

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130167

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CURVES OF RII PRIME POSITIVE MARKER SURVIVAL (IN PHAGE T4 TRANSFORMED BY UV IRRADIATED DONOR DNA) HAVE BEEN INVESTIGATED IN EXPTS. PERFORMED IN ESCHERICHIA COLI B SPHEROPLASTS. FOR ALL THE DELETIONS STUDIED, THESE CURVES SHOW A RAPID DROP AT LOW UV DOSE FOLLOWED BY A LINEAR REGION. EXTRAPOLATION OF THE STRAIGHT LINE REGION TO ZERO UV DOSE INDICATES THAT ABOUT HALF OF THE R PRIME POSITIVE RECOMBINANTS ARE DESTROYED AT LOW DOSE, WHILE THE OTHER HALF IS MUCH MORE RESISTANT TO UV AND REPRESENTS A DISTINCT CLASS OF R PRIME POSITIVE RECOMBINANTS. THE DONOR MOLS., WHICH FIRST COMBINE WITH THE NONIRRADIATED PHAGE RECIPIENT, ARE LATER INCORPORATED IN THE RAPIDLY DELETED RII PRIME POSITIVE MARKERS (EXPTS. WITH DELETION 164). COMPARISON BETWEEN THE SIZE OF DONOR DNA MOLS. AND THEIR SENSITIVITY TO UV INDICATES THAT THE REGION OF PAIRING OF DONOR AND ACCEPTOR MOLS. IS 800-900 NUCLEOTIDES LONG. FACILITY: INST. GEN. GENET., MOSCOW, USSR.

UNCLASSIFIED

1/3 907 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THE FORMATION OF HETEROZYGOTES IN THE COURSE OF DNA RECOMBINATION OF DONOR AND RECIPIENT IN THE CASE OF TRANSFORMATION IN PHAGES -U-

AUTHOR--VINETSKIY, YU.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 190, NO 6, 1970, PP 1463-1466

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIO PHAGE, DNA, CHROMOSOME, GENOTYPE, BACTERIAL GENETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605022/DLL STEP NO--UR/0020/70/191/006/1463/1466

CIRC ACCESSION NO--AT0141199

UNCLASSIFIED

2/3 007 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0141199

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE FORMATION OF HETEROZYGOTES DURING DNA RECOMBINATION OF DONOR AND RECIPIENT IN THE CASE OF TRANSFORMATION IN PHAGES. GENETIC RECOMBINATION IN BACTERIOPHAGES RESULTS IN THE FORMATION OF A HYBRID DNA MOLECULE BEARING THE MARKERS OF BOTH PARENT PHAGES. THERE IS PROOF OF THE HYPOTHESIS THAT THE RECOMBINANT IS FORMED BY BREAKING THE PARENT CHROMOSOMES AND JOINING THEIR FRAGMENTS INTO HYBRID MOLECULES. EXPERIMENTAL DATA INDICATE THAT AT THE ENDS OF THE MOLECULES OF DNA PHAGES ISOLATED FROM INFECTED BACTERIA, A CUTTING OUT OF ONE HELIX OF DNA OCCURS. IT IS ASSUMED THAT IN THE INFECTED CELL, THE WHOLE PHAGE CHRONOSOME IS FORMED BY COMPLEMENTARY PAIRING OF SINGLE HELIX SECTIONS OF THE DNA FRAGMENTS. RECOMBINATION IN BACTERIAL TRANSFORMATION OCCURS BY INSERTION OF A SINGLE STRAND MOLECULE OF THE DONOR INTO THE BACTERIAL CHROMOSOME. NOT LONG AGO, IT WAS LEARNED THAT IN BACTERIAL TRANSFORMATION, A HETEROZYGOUS REGION IS FORMED AT THE SITE OF COMPLEMENTARY INTERACTION OF A SINGLE HELIX SECTIONS OF DONOR AND RECIPIENT DNA. STUDY OF GENOTYPES OF HETEROZYGOTES WHICH APPEAR IN PHAGE CROSSINGS REVEAL THAT THEY ARE RECOMBINANTS. IT WAS POSTULATED THAT FORMATION OF HETEROZYGOTES WAS ONE OF THE NECESSARY STEPS IN RECOMBINATION OF THE TWO MOLECULES OF PHAGE DNA. IN THE PRESENT STUDY, AN ATTEMPT WAS MADE TO DETERMINE WHETHER EACH RECOMBINATION ACT BY TWO MOLECULES OF PHAGE DNA PASSES THROUGH THE STAGE OF HETERODUPLEX HETEROZYGOTE FORMATION. THE FORMATION OF HETERODUPLEX HETEROZYGOTES CAN BE DETERMINED BY CLONE ANALYSIS OF PHAGE DESCENDANT PARTICLES.

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3/3 007 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AT0141199
ABSTRACT/EXTRACT--AFTER REPLICATION OF EACH OF THE CHAINS OF THE PRIMARY RECOMBINANT MOLECULE, DAUGHTER REPLICAS WITH ORIGINAL GENOTYPES, I.E., A MIXED CLONE OF PHAGE PARTICLES IS FORMED. AN ANALYSIS WAS MADE OF GENOTYPES OF R PRIME POSITIVE RECOMBINANTS IN CLONES FROM SINGLE SPHEROPLASTS OF E. COLI B IN TRANSFORMATION OF PHAGE T4B RII 164. FROM DATA OF THE ANALYSIS OF GENOTYPES OF PARTICLES IN YEASTS, WHERE THERE WERE 2-4 RECOMBINANTS, IT WAS CONCLUDED THAT IN THESE CLASSES THE FRACTION OF PURE CLONES IS HIGHER THAN IN THE CLASSES WITH A LARGE NUMBER OF CLONES. IN CLASSES WITH FIVE RECOMBINANTS AND MORE, PURE CLONES OF GENOTYPE AM PRIME POSITIVE ARE NOT FOUND. FROM COMPLETE ANALYSIS OF ALL EXPERIMENTAL DATA, IT WAS CONCLUDED THAT IN THE PRIMARY ACT OF RECOMBINATION BETWEEN THE TRANSFORMING DONOR AND RECIPIENT DNA MOLECULE OF PHAGE T84, HETERODUPLEX HETEROZYGOTE FORMATION ALWAYS OCCURS. THE INTERACTION OF PHAGE GENOMES, IN THEIR GENETIC RECOMBINATION, PROCEEDS VIA HOMOLOGOUS PAIRING OF SINGLE HELIX SECTIONS OF DNA MOLECULES. FACILITY: INSTITUTE OF GENERAL GENETICS, MOSCOW, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

UDC 576.12

USSR

VINETSKIY, YU. P., Institute of General Genetics, Moscow, Academy of Sciences USSR

"The Formation of Heterozygotes in the Course of DNA Recombination of Donor and Recipient in the Case of Transformation in Phages"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 6, 1970, pp 1463-1466

Abstract: A study was made of the formation of heterozygotes during DNA recombination of donor and recipient in the case of transformation in phages. Genetic recombination in bacteriophages results in the formation of a hybrid DNA molecule bearing the markers of both parent phages. There is proof of the hypothesis that the recombinant is formed by breaking the parent chromosomes and joining their fragments into hybrid molecules. Experimental data indicate that at the ends of the molecules of DNA phages isolated from infected bacteria, a cutting-out of one helix of DNA occurs. It is assumed that in the infected cell, the whole phage chromosome is formed by complementary pairing of single-helix sections of the DNA fragments. Recombination in bacterial transformation occurs by insertion of a single-strand molecule of the donor into the bacterial chromosome. Not long ago,

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USSR

VINETSKIY, YU. P., et al., Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 6, 1970, pp 1463-1466

it was learned that in bacterial transformation, a heterozygous region is formed at the site of complementary interaction of single-helix sections of donor and recipient DNA. Study of genotypes of heterozygotes which appear in phage crossings reveal that they are recombinants. It was postulated that formation of heterozygotes was one of the necessary steps in recombination of the two molecules of phage DNA. In the present study, an attempt was made to determine whether each recombination act by two molecules of phage DNA passes through the stage of heteroduplex heterozygote formation.

The formation of heteroduplex heterozygotes can be determined by clone analysis of phage descendant particles. After replication of each of the chains of the primary recombinant molecule, daughter replicas with original genotypes, i.e., a mixed clone of phage particles is formed. An analysis was made of genotypes of r^+-recombinants in clones from single spheroplasts of E. coli B in transformation of phage T4B rII 164. From data of the analysis of genotypes of particles in yeasts, where there were 2-4 recombinants, it was concluded that in these classes the fraction of pure clones is higher than in

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USSR

VINETSKIY, YU. P., et al., Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 6, 1970, pp 1463-1466

the classes with a large number of clones. In classes with five recombinants and more, pure clones of genotype am^+ are not found. From complete analysis of all experimental data, it was concluded that in the primary act of recombination between the transforming donor and recipient DNA molecule of phage T4B, heteroduplex heterozygote formation always occurs. The interaction of phage genomes, in their genetic recombination, proceeds via homologous pairing of single-helix sections of DNA molecules.

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USSR

UDC 538.577.31

VINICHENKO, YU.P., ZAKHAR'YEV, L.N., LEMANSKIY, A.A., TUMANSKAYA, A. YE.

"Diffraction Of A Plane Wave At The Grating Of Plane Waveguides With Protruding Dielectric Plates"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1382-1386

Abstract: In order to evaluate the efficiency of using dielectric radiators for matching waveguide-type gratings with space, the problem is considered of diffraction of a plane wave at an endless grating of plane waveguides filled with dielectric plates which protrude some distance from the waveguide. It is assumed that the waveguides have perfect conductivity and their thickness is arbitrary. This problem reduces to the solution of an infinite system of algebraic equations concerned with the amplitudes of the partial waves in space under the grating in the region which is occupied by the protruding parts of the plates and within the waveguides. The results are presented of numerical calculations which show that the dielectric radiators make it possible substantially to decrease the mismatch of a waveguide-type grating with space. 4 fig. 2 ref. Received by editors, 14 June 1971.

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Acc. Nr: AP0045019

Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST.

Ref. Code: UR0109

A70-22407 Problem of the diffraction of an electromagnetic wave on an array of plane waveguides (K zadache difraktsii elektromagnitnoi volny na reshetke ploskikh volnovodov). Yu. P. Vinichenko, I. N. Zakhar'ev, A. A. Lemanskii, and A. E. Tumanskaia. *Radiotekhnika i Elektronika*, vol. 15, Jan 1970, p. 58-66. 12 refs. In Russian.

Investigation of the characteristics of the field scattered by an infinite equidistant array of plane waveguides filled by a lossless homogeneous isotropic medium. The scattered field is determined by solving an infinite system of algebraic equations using the reduction method. For the case where there is only a specularly reflected beam, an estimate is given of the degree of approximation at which the truncated system of equations yields a practically accurate solution of the problem. The characteristics of the scattered field are analyzed, and attention is given to different methods of matching the waveguide array to free space.

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REEL/FRAME
19771915

USSR

UDC 669.011.7

SAMSONOV, G. V., KOVTUN, V. I., TIMOFEYEVA, I. I., ROGOZINSKAYA, A. A., And VINITSKIY, A. G., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR, Kiev

"Nature of the High Microhardness of Surfaces Hardened by Friction"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 4, 1973, pp 26-30

Abstract: Strengthening of surfaces by dry sliding friction in a vacuum was studied for refractory metals of groups IV-VIII of the periodic system. Microhardness of the samples rises to a rather high maximum value and then drops off. In addition to microhardness, lattice parameters, mosaic block size, type II distortion, and dislocation density of the metals were determined after undergoing friction. The data on the fine structure and dislocation density in the deformed layers do account for the high degree of metal hardening nor do they explain the variance in metal strengthening at the characteristic pressure equal to 25% of the tensile strength. It was shown that the decisive factor in the strengthening is the electron structure of the metals and the change in this structure during deformation by friction. 6 figures, 3 tables, 21 bibliographic references.

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USSR

UDC 669.15'26'28-194:620.186

VINITSKIY, A. G., YANENSKIY, N. YE., MOSHNYAGUL, V. V., KOGAN, G. M., SHCHEGLYUK, P. S., and POKRYSHKINA, V. A., Kirovograd Institute for Agricultural Machine Building

"Influence of Structure on the Wear Resistance of Stamps Made of Kh12M Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1971, pp 74

Abstract: The influence of the structure of Kh12M steel on the wear resistance was studied as applicable to conditions of operation of dies and matrices of stamps for cutting and punching of transformer steel. It was found that Kh12M steel with austenitic structure has higher wear resistance under dry friction conditions with dynamic loading than hardened martensitic steel. Hardening from 1180-1200°C in oil and tempering at 180-220°C for 1.5-2 hr represent the optimal heat treatment mode for Kh12M steel.

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USSR

UDC 532.526

VINITSKIY, A. G., and GALYKO, A. V., Kirovograd Institute of Agricultural Machinery

"Effect of the Structure and the State of the Surface on the Coefficient of Friction of Al-alloys"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 4, 1970, pp 25-28

Abstract: Binary aluminum alloys containing 2, 5, 10, 15, and 20% of tin were studied during the process of friction by means of steel and aluminum balls rolling without lubricants. At low concentrations of the tin, the coefficient of friction was found to be high, decreasing with an increase of the tin content. In general, the structural components of the aluminum-tin alloys exhibited a gradient of physico-chemical properties. The contours formed due to plastic deformation during the friction process and the capture process depend on quantitative relationship of the phases and exhibit an effect on the antifrictional properties of these alloys. It is concluded that, in order to improve the mechanical properties and at the same time preserve their antifrictional characteristics, aluminum alloys with high tin content should be subjected to preliminary plastic deformation followed by annealing.

1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ELECTRODEPOSITION OF IRON ALLOYS -U-

AUTHOR-(04)-VINITSKIY, A.G., KOVTUN, V.I., PUDA, V.A., MYASKOVSKIY, L.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,097
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, IRON COBALT ALLOY, MANGANESE ALLOY, ELECTROLYTE, ELECTRODEPOSITION, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1827 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132092
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0132092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN FE,CO,MN ALLOY IS PREPD. FROM AN ELECTROLYTE CONTG. FECL SUB2 100-150, COCL SUB2 50-700, AND MNCL SUB2 100-200 G-L. AT PH 0.8-1.6, C.D. 20-50 A-DM PRIME2, AND 30-80DEGREES.

FACILITY: KIROVOGRADSKIY INSTITUT SEL'SKOKHOZYAYSTVENNOGO MASHINOSTROYENIYA.

UNCLASSIFIED

USSR

UDC 539.171.017

BOOS, E. G., VINITSKIY, A. Kh., TAKIBAYEV, Zh. S., TURSUNOV, R. A., CHASNIKOV, I. Ya., Institute of High-Energy Physics of the Academy of Sciences Kazakh SSR

"Comparison of the Characteristics of Pion-Nucleon and Proton-Nucleon Interactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 36, No. 8, Aug 72, pp 1701-1704

Abstract: The various characteristics of inelastic proton-nucleon (pN) and pion-nucleon (πN) collisions were compared, since they are of great interest in explaining the characteristics of the mechanism of hadron interactions and in determining the possibility of distinguishing different types of events formed by cosmic ray particles. The work is based on experimental material obtained in studying collisions between 17-Gev pions and 20-Gev protons with nucleons of a nuclear emulsion. The CERN synchrotron was used in the study. A comparison of experimental material for these energies was convenient, since the center-of-inertia systems of hadron collisions in this case have approximately the same velocity. Data obtained

USSR

BOOS, E. G., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 36, No. 8, Aug 72, pp 1701-1704

from analyzing 288 πN-interactions found in nuclear emulsions irradiated by 60-Gev pions in the accelerator of the Institute of High-Energy Physics (Serpukhov) were also used in the study. A table is given showing the coefficient of asymmetry of the angular distribution of the charged pions as a function of the number of secondary charged particles. Despite the presence of asymmetry in individual groups of proton-nucleon collisions, the angular distribution of π-mesons from pN-interactions was practically the same averaged over all multiplicities. In pion-nucleon collisions there was found a strong asymmetry of the charged pions in the leading hemisphere of the center-of-inertia system that decreased with the growth of the number of secondary charged particles. This asymmetry is sometimes explained by the primary pions conserving their direction, but at an energy of 17 Gev the hypothesis of a "conserving pion" encounters certain difficulties, since the number of pions contributing to the asymmetry of the angular distribution of pions summed over all multiplicities is approximately equal to the number of interactions necessary

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USSR

BOOS, E. G., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 36, No. 8, Aug 72, pp 1701-1704

to assume the absence of charge exchange of the primary pion. It is concluded that there is a difference in the characteristics of πN- and pN-interactions which does not disappear completely upon taking into account "conserving pions", since the divergence is more characteristic for a small number of secondary charged particles. At the same time, coincidence of the characteristics of these interactions is noted for collisions with large values of four-dimensional transfers.

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UDC 539.12

USSR

VINITSKIY, A. KH., VOINOV, V. G., STREL'TSOV, I. S., TAKIBAYEV, ZH. S., Academician of the Academy of Sciences Kazakh SSR, and CHASNIKOV, I. YA., Institute of Nuclear Physics of the Academy of Sciences Kazakh SSR, Alma-Ata

"Characteristics of the Coherent Interaction of π^--Mesons with Emulsion Nuclei at 60 Gev"

Moscow, Doklady Akademii Nauk SSSR, Vol. 194, No. 3, 21 Sep 70, pp 544-546

Abstract: Coherent generation of particles in the interaction of high-energy pions with nuclei is discussed. The startup of the Serpukhov accelerator made it possible to study these processes up to energies of 60-70 Gev. This article discusses three- and five-ray events in a VR-2 photoemulsion found after examining tracks of primary pions over a distance of 870 m. It was found that the cross section for the coherent formation of the system $\pi^+\pi^-\pi^-$ in the final state increases with the energy of the primary particle, while the maximum in the effective mass distribution of this system remains in the same region as for an energy of 17 Gev. A considerable rise in the number of five-particle coherent

USSR

VINITSKIY, A. KH., et al, Doklady Akademii nauk SSSR, Vol. 194, No. 3, 21 Sep 70, pp 544-546

interactions was also found. At 17 Gev the number of events of the reaction

$$\pi^- + A \to \pi^+ + 2\pi^- + 2\pi^0 + A'$$

was 2% of the reaction

$$\pi^- + A \to \pi^- + \pi^+ + \pi^- + A^-,$$

while at 60 Gev the number of five-particle coherent states was 70% as compared with the number of three-particle states. It is noted that this value may be somewhat high, since the reaction $\pi^- A \to \pi^- \pi^0 \pi^- A'$ was not taken into account.

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USSR UDC: 621.372.061

VINITSKIY, A. S.

"On the Problem of the Theoretical Principles of Follow-up Reception"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference--Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 32-44 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A146)

Translation: The author considers the peculiarities of follow-up reception systems responsible for the ineffectiveness of traditional mathematics of the theory of linear circuits as well as active spectrum methods and other approximate methods based on spectral-harmonic representation when they are used to study such systems. It is shown that the method of adjusted readout systems, which is free of the limitations of the above-mentioned methods of analysis, is adequate for systems with follow-up filters (both with external tuning and with self-tuning). The principal singularities of this method are discussed. It is shown by examples that the use of an adjusted readout system can eliminate a number of difficulties in construction of a statistical theory of follow-up filters as well. In conclusion, the peculiarities of follow-up reception systems with follow-up heterodynes are discussed, and conditions are determined for applicability of the method of adjusted readout systems to the study of these reception systems. Resumé.

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USSR UDC 632.3

TROFIMETS, L. N., Senior Scientific Associate, Laboratory of Potato Virus Diseases, Institute of Potato Culture, Ministry of Agriculture, RSFSR and VINKLER, G. M., Junior Scientific Associate, Laboratory of Potato Virus Diseases, Institute of Potato Culture, Ministry of Agriculture RSFSR

"The Potato and Viruses"

Moscow, Priroda, No 7, 1971, pp 49-55

Abstract: The potato suffers from various virus diseases and from degeneration -- the loss of yield by any given strain over a course of years. The characteristics and symptoms of the various virus diseases are briefly discussed and illustrated by photographs of affected plants. Methods of diagnosis, including serological methods (introduction of test material into the blood of experimental animals, and the obtaining of sera) are discussed. Identification of viruses by electron microscopy is covered.

The experience of Soviet and US plant breeders in producing virus-resistant strains of potato is summarized. Some of these strains react to virus infection by forming zones of dead cells around the site of introduction of the virus. Crossing with wild types to produce virus-resistant strains is made difficult by the distance between the wild types and the cultivated

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USSR

TROFIMETS, L. N., and VINKLER, G. N., et al., Priroda, No 7, 1971, pp 49-55

plant. Special methods such as experimental polyploidy have been developed to overcome this difficulty. An infected planting of potatoes will sometimes contain a few healthy individual plants. These are removed in separate packets, and planted the following year in isolation from the infected plants. After 4 years of progeny testing, new virus-free strains are developed from them.

2/2

USSR

UDC 539.4

VINKLER, O. N., Moscow, Central Scientific Research Institute for Designing Steel Structures

"Effect of Preliminary Plastic Deformation and Aging on the Brittleness of Low-Carbon Steel"

Kiev, Problemy Prochnosti, No 8, Aug 70, pp 110-114

Abstract: The results are presented of an investigation of the effect of preliminary plastic deformation and aging on the brittleness of low-carbon steel subjected to tensile stress at low temperature in the presence of fatigue cracks. Killed VMSt3, semi-killed VMSt3, and effervescing VMSt3 steels 8, 12, and 20 mm thick were studied. Their chemical composition and mechanical properties are given in tables. An analysis of the results shows that the effect of strain aging (plastic deformation by stretching) of low-carbon steel on the resistance of structural components to brittle fracture at up to -60°C depends on the magnitude of preliminary deformation, stress concentrations, the degree of steel deoxidation, and sheet steel thickness.

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USSR

UDC 546.77'183:661.183.9

VINNER, I. K., VOICHINOVA, E. S., DENISOVA, N. E.

"Ion-Exchange Properties of Zirconium 'Molybdophosphates' (ZMP)"

Leningrad, Russian, Zhurnal prikladnoi khimii, vol 46, No 7, July 73, pp 1471-1475

Abstract: Studies on the ion-exchange properties of ZMP as a function of the method of preparation showed that ZMP prepared at pH 3 was smaller in volume and had smaller pores than samples prepared at lower pHs (0.50-1.65). In the presence of heteropoly acid, ions that form slightly soluble molybdates were sorbed partially by a precipitation mechanism. But in the presence of phosphomolybdic heteropoly acid, sorption was chiefly by ion exchange. When the ZMP product was dried at temperatures higher than 150°C, the ion-exchange volume decreased markedly compared to that dried at lower temperatures. Above 400°C, there was a condensation of the phosphoric acid groups.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--REACTION OF BORIC ACID WITH HYDROXYANTHRAQUINONES -U-

AUTHOR-(02)-NAZARENKO, V.A., VINKOVETSKAYA, S.YA.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 115-20

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BORIC ACID, HYDROXYL RADICAL, ANTHRAQUINONE, SULFONIC ACID, SPECTROPHOTOMETRIC ANALYSIS, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1059 STEP NO--UR/0073/70/036/002/0115/0120

CIRC ACCESSION NO--AP0128486

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE KINETIC ENERGY SPECTRUM IN THE FREE ATMOSPHERE 1 SECOND TO 5 YEARS -U-

AUTHOR--VINNICHENKO, N.K.

COUNTRY OF INFO--USSR

SOURCE--TELLUS, VOL. 22, NO. 2, 1970, P. 158-166

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ENERGY SPECTRUM, FREE ATMOSPHERE, KINETIC ENERGY, SPECTRUM, WIND VELOCITY, ATMOSPHERIC STRATIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1762 STEP NO--SW/0000/70/022/002/0158/0166

CIRC ACCESSION NO--AP0125378

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125378

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ENERGY SPECTRUM OF WIND SPEED AT ALTITUDES FROM 3 TO 20 KM IS CONSTRUCTED FROM RAWINSONDE AND AIRCRAFT DATA ORIGINATING IN THE U.S.A. AND THE USSR. MOST OF THE OBSERVATIONS ARE CONCENTRATED NEAR 40 DEG N AND COVER PERIODS FROM 1 SEC TO 5 YEAR. THE SPECTRUM IS SUBDIVIDED INTO THREE MAJOR REGIONS SEPARATED BY GAPS: A SHARP ANNUAL MAXIMUM, A SYNOPTIC (OR MACROSCALE) MAXIMUM AT PERIODS FROM 1-2 MONTHS TO 3-4 DAYS, AND A MICROSCALE MAXIMUM WITH PERIODS OF 1-3 MIN. IT IS SHOWN THAT THE MICROSCALE MAXIMUM IS NOT A PERMANENT FEATURE OF THE SPECTRUM. USUALLY HIGH FREQUENCY TURBULENCE IS SUPPRESSED BY STABLE STRATIFICATION IN THE FREE ATMOSPHERE AND ITS ENERGY IS NEGLIGIBLY SMALL. SPECTRA IN THE FREE ATMOSPHERE AND NEAR THE GROUND ARE COMPARED. AN ATTEMPT IS MADE TO RELATE FREQUENCY AND WAVE NUMBER SPECTRA AT SYNOPTIC SCALES. FACILITY: TSENTRAL'NAIA AEROLOGICHESKAIA OBSERVATORIIA, DOLGO PRUDNAYA, USSR.

UNCLASSIFIED

Acc. Nr.: AP0044031

Ref. Code: 71R0387
JPRS 52052

PcP Wave in Atomic Bursts and Core-Mantle Boundary

(Abstract: "The PcP Wave Accompanying Atomic Bursts and the Nature of the Core-Mantle Discontinuity," by I. P. Vinnik and G. G. Dashkov, Institute of Physics of the Earth; Moscow, Izvestiya Akademii Nauk SSSR, Fizika Zemli, No. 1, 1970, pp. 7-16)

In the analysis of records of atomic bursts registered at Soviet seismic stations it appeared that inexplicably high values of the PcP/P ratio are the result of inadequately correct processing of observations. The scatter of PcP/P ratios for seismograms of atomic bursts was so great that on approximately half the seismograms the PcP wave could not be discriminated at all, whereas on others it was comparable in amplitude with P. A failing in many estimates made of the coefficient of reflection from the surface of the core is that in analysis of observations cases when the PcP wave was so weak that it could not be discriminated on the seismogram were completely ignored. An obvious reason for the observed scatter is the presence of random inhomogeneities in the medium. Unfortunately, little or nothing is known concerning the nature of these inhomogeneities; it can only be postulated that large-scale inhomogeneties do exist. The authors

AP0044031

propose a method for estimating the mean ratio of densities of the energy fluxes of two waves when one of them is discriminated on only some seismograms. The method is based on the assumption that in cases when a wave is not discriminated its amplitude does not exceed the amplitude of the background. The mean and dispersion of the logarithm of the ratio of amplitudes are estimated using the maximum similarity method. The coefficient of reflection of longitudinal waves at the core-mantle boundary is estimated; this agrees satisfactorily with the observed ratios of the amplitudes of PcP and P waves. An estimate of the dispersion of the logarithm of amplitudes of the PcP wave is also obtained. Presently available data on the dynamics of longitudinal waves reflected from the surface of the core (amplitudes, arrival times and spectra) are analyzed and correlated. It is concluded that the density jump at the boundary of the core is either small or completely absent; the increase in density can occur over a distance of tens or hundreds of kilometers, not at the boundary, which is known due to its reflectivity.

19770470

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1/3 036 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--FERROMAGNETIC RESONANCE AND NONLINEAR EFFECTS IN LITHIUM AND ZINC FERRITE SINGLE CRYSTALS -U-

AUTHOR-(04)-YAKOVLEV, YU.M., VINNIK, M.A., RUBALSKAYA, E.V., LAPOVOK, B.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 866-72

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SINGLE CRYSTAL, FERROMAGNETIC RESONANCE, LITHIUM, FERRITE CRYSTAL, CRYSTAL LATTICE STRUCTURE, MAGNETIC MOMENT, BORON OXIDE, LEAD OXIDE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0620 STEP NO--UR/0181/70/012/003/0866/0872

CIRC ACCESSION NO--AP0105600

UNCLASSIFIED

2/3 036 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105600

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STATIC MAGNETIC PROPERTIES WERE INVESTIGATED OF SINGLE CRYSTALS OF LI AND ZN FERRITE, LI SUB0.5(1 MINUS X)FE SUB0.51(1 MINUS X)ZN SUBX FE SUB2 O SUB4, WHERE X EQUALS 0, 0.1, 0.18, AND 0.24. THE CRYSTALS WERE GROWN FROM PBO PLUS B SUB2 O SUB3. ON VARIATION OF THE COMPN., THE LATTICE PARAMETER VARIES IN THE LIMITS (8.331-8.367) PLUS OR MINUS 0.001 A. THE MAGNETIC MOMENT WAS MEASURED BY THE METHODS OF WEISS AND FARADAY IN FIELDS IS SMALLER THAN OR EQUAL TO 10 KOE. REPLACEMENT OF PART OF THE TETRAHEDRAL FE AND LI IONS BY ZN IONS LEADS TO AN INCREASE IN THE MAGNETIC MOMENT AND DECREASE IN THE CURIE TEMP. OF THE COMPD. AT X EQUALS 0.24, CRYSTALS WERE OBTAINED WITH MAGNETIZATION, 4PIM EQUALS 4900 G AT NORMAL TEMP. THE EXPTL. DATA ON THE MAGNETIC MOMENT AND THE CURIE TEMP. ARE COMPARED WITH THE DATA OBTAINED IN TERMS OF THE MODEL OF NEEL AND GILIO. MEASUREMENTS OF THE FERROMAGNETIC RESONANCE OF THE SYNTHETIC CRYSTALS ALLOWED ONE TO DET. THE 1ST AND 2ND ANISOTROPY CONSTS. (K SUB1 AND K SUB2) AS FUNCTIONS OF TEMP. AND ALSO TO OBSERVE NONLINEAR 1ST ORDER PROCESSES AT COINCIDENCE OF THE RESONANCES AT 9.1 GHZ. THE RATHER WEAK DEPENDENCE OF K SUB1 ON THE COMPN. INDICATES THAT THE CONTRIBUTION OF THE 1 ION MECHANISM OF ANISOTROPY IN THE INVESTIGATED SOLID SOLNS. IS SMALL. TEMP. DEPENDENCES ARE GIVEN OF THE WIDTH OF THE RESONANCE LINE MEASURED FOR SPECIMENS OF 3 COMPNS. UNDER VARIOUS CONDITIONS OF POWER AND IN VARIOUS CRYSTALLOGRAPHIC DIRECTIONS. THE LIMITING FREQUENCY OF THE REGION OF COINCIDENCE IS PRACTICALLY INDEPENDENT OF THE ORIENTATION OF THE SPECIMEN IN THE (110) PLANE RELATIVE TO THE CONST. MAGNETIC FIELD.

UNCLASSIFIED

3/3 036 UNCLASSIFIED PROCESSING DATE--18SEP70
IRC ACCESSION NO--AP0105600
ABSTRACT/EXTRACT--MIN. THRESHOLD POWER AT "NORMAL" TEMP. AT 9.1 GHZ FOR THE SPECIMEN WITH X EQUALS 0.24 (4PIM EQUALS 4900 G) IS 30 MUW.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--KINETICS AND MECHANISM OF THE SULFONATION OF 2,3,DIMETHYL,1,7,TRIMETHYLENEINDOLE IN CONCENTRATED SULFURIC ACID

AUTHOR-(04)-VINNIK, M.I., ABRAMOVICH, L.D., YUDIN, L.G., BUDYLIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1061-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION KINETICS, CHEMICAL REACTION MECHANISM, SULFONATION, SULFURIC ACID, AQUEOUS SOLUTION, INDOLE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1271 STEP NO--UR/0366/70/006/005/1061/1065

CIRC ACCESSION NO--AP0134945

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION IS 1ST ORDER. IT GIVES 2,3,DIMETHYL,1,7,TRIMETHYLENEINDOLE,5,SULFONIC ACID (I). THE STRUCTURE OF I WAS ESTABLISHED BY ITS CONVERSION TO THE AMIDE, ALSO PREPD. BY TREATING 2,3,DIMETHYL,1,7,TRIMETHYLENEINDOLE WITH CLSO SUB3 H TO GIVE THE ACID CHLORIDE OF I, WHICH WAS TREATED WITH NH SUB3. THE SULFONATION RATE CONSTS. INCREASE LINEARLY WITH SO SUB3 CONCN. IN H SUB2 SO SUB4 USED IN THE REACTION. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--KINETICS OF BENZENESULFONAMIDE SOLVOLYSIS IN DILUTE FUMING SULFURIC ACID -U-

AUTHOR-(04)-RYABOVA, R.S., VINNIK, M.I., LAZAREVA, V.T., ERLIKH, R.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 797-800

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION KINETICS, AMIDE, SULFURIC ACID, BENZENE DERIVATIVE, ORGANIC SULFUR COMPOUND, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2153 STEP NO--UR/0366/70/006/004/0797/0800

CIRC ACCESSION NO--AP0125736

UNCLASSIFIED

2/2 011 UNCLASSIFIED

CIRC ACCESSION NO--AP0125736 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLVOLYSIS OF PHSO SUB2 NH SUB2 IN OLEUM CONTG. 0.01-1.63PERCENT SO SUB3 GIVES PHSO SUB3 H AND H SUB2 NSO SUB3 H AND IT IS A 1ST ORDER REACTION IN RESPECT TO PHSO SUB2 NH SUB2. THE EFFECTIVE RATE CONSTS. INCREASE WITH SO SUB3 CONCN. IN THE LINEAR FASHION. A REACTION MECHANISM IS PROPOSED INVOLVING THE FORMATION OF A COMPLEX BETWEEN PHSO SUB2 NH SUB2 AND H SUB2 S SUB2 O SUB7 (WHICH EXISTS IN OLEUM) AND ITS DECOMPN. TO PHSO SUB3 H AND H SUB2 NS SUB2 O SUB6 H WHICH REACTS WITH H SUB2 SO SUB4 GIVING H SUB2 NSO SUB3 H AND H SUB2 S SUB2 O SUB7.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ACTIVITY COEFFICIENTS AND IONIZATION CONSTANTS OF SOME NITROACETANILIDES AND NITROANILIDES IN AQUEOUS POTASSIUM HYDROXIDE

AUTHOR-(02)-POCHIKYAN, A.KH., VINNIK, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970. (2), 300-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, DISTRIBUTION COEFFICIENT, ANILINE, ORGANIC NITRO COMPOUND, ACETANILIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0825 STEP NO--UR/0062/70/000/002/0300/0306

CIRC ACCESSION NO--AP0119729

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119729

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. DATA AND DISTRIBUTION COEFFS. WERE TABULATED FOR ACNMEC SUB6 H SUB4 NO SUB2 ISOMERS IN AQ. KOH AND INERT SOLVENTS. THE ACTIVITY COEFFS. OF THESE SOLUTES AND THE RELATED ANILINES WERE OBTAINED FROM SPECTROPHOTOMETRIC MEASUREMENTS. THE VARIATION OF ACTIVITY COEFFS. WITH CONCN. CAN BE EXPRESSED IN TERMS OF EITHER THE SECHENOV EQUATION OR OF EMPIRICAL EQUATIONS DEVELOPED FOR EACH CLASS OF SOLUTE. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--KINETICS AND MECHANISM OF REACTIONS IN CONCENTRATED STRONG ACIDS.. XXII. HYDROLYSIS OF 1,FORMYL,1,2,3,4,TETRAHYDROQUINALDINE IN AQUEOUS

AUTHOR--ZARAKHANI, N.G., PROMYSLOV, V.M., YUDIN, L.G., VINNIK, M.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 52-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION KINETICS, HYDROLYSIS, AQUEOUS SOLUTION, SULFURIC ACID, CHEMICAL REACTION MECHANISM, QUININE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1043 STEP NO--UR/0076/70/044/001/0052/0055

CIRC ACCESSION NO--AP0104441

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0104441
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF HYDROLYSIS OF 1,FORMYL,1,2,3,4,TETRAHYDROQUINALDINE (I) TO 1,2,3,4,TETRAHYDROQUINALDINE WAS MEASURED SPECTROSCOPICALLY (LAMBDA EQUALS 240 NM) IN 0.99 TO 59.60 PERCENT H SUB2 SO SUB4 AT 25.0 PLUS OR MINUS 0.1DEGREE. THE REACTION IS IRREVERSIBLE AND 1ST ORDER IN I. DEPENDENCE OF K SUBEFF ON H SUB2 SO SUB4 CONCN. SHOWS A MAX. AT 24PERCENT IN ACCORD WITH THE DEPENDENCES OF CONCNS. OF H SUB3 O PRIME POSITIVE AND UNIONIZED FORM OF I. PK SUBBH PRIME POSITIVE OF I AT 25DEGREES IS MINUS 2.00 PLUS OR MINUS 0.02. E SUBAKT WAS DETD. FROM KINETIC MEASUREMENTS AT 49.1, 59.0, 68.4, 77.7, AND 87.4DEGREES (E SUBAKT, KCAL-MOL AND H SUB2 SO SUB4 CONCN. PERCENT ARE GIVEN): 18.7 PLUS OR MINUS 1.4, 0.99; 21.7 PLUS OR MINUS 1.5, 54.74; 21.7 PLUS OR MINUS 1.5, 59.60.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520001-6"

1/3 021 UNCLASSIFIED PROCESSING DATE--27OV70

TITLE--PP WAVE DURING ATOMIC BURSTS AND ATTENUATION OF LONGITUDINAL WAVES IN THE UPPER MANTLE -U-

AUTHOR-(02)-VINNIK, P., DASHKOV, G.G.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 190, NO 6, 1970, PP 1340-1343.

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--LONGITUDINAL WAVE, UNDERGROUND EXPLOSION, NUCLEAR EXPLOSION, ATTENUATION, UPPER MANTLE, SEISMOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1636 STEP NO--UR/0020/70/190/006/1340/1343

CIRC ACCESSION NO--AT0135262

UNCLASSIFIED

2/3 021 UNCLASSIFIED

CIRC ACCESSION NO--AT0135262 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION THE AMPLITUDES OF PP (LONGITUDINAL) WAVES REFLECTED FROM THE EARTH'S SURFACE AT HALF EPICENTRAL DISTANCE ARE ANALYZED. THE METHOD USED IS DESCRIBED BY THE AUTHORS IN AN EARLIER PAPER (DAN, 184, NO 7, 1969). IT WAS SHOWN THAT THE PROBLEM OF CALIBRATING SEISMIC SOURCES, RELIABLE CALIBRATION OF INSTRUMENTS AND ALLOWANCE FOR THE CONDITIONS UNDER WHICH THEY ARE SET UP CAN BE AVOIDED IF MEASUREMENTS OF THE ABSOLUTE VALUES OF THE AMPLITUDE OF DIFFERENT PHASES OF BODY WAVES ARE REPLACED BY MEASUREMENTS OF THEIR RATIO ON THE SAME SEISMOGRAM. A PECULIARITY OF BODY WAVES IS A GREAT SCATTER OF AMPLITUDES CAUSED BY A NUMBER OF FACTORS. THERE IS BASIS FOR ASSUMING THAT THE AMPLITUDE OF A SEISMIC WAVE AS A RANDOM VALUE HAS A LOG NORMAL DISTRITUTION. IN THIS CASE ALL THE INFORMATION WHICH CAN BE EXTRACTED FROM OBSERVATIONS IS INCORPORATED IN THE MEAN MU AND THE DISPERSION D PRIME2 OF THE LOGARITHM OF RATIO OF AMPLITUDES. DUE TO THE SCATTER OF AMPLITUDES THE WAVE WHICH IS OBSERVED IN THE SUBSEQUENT ARRIVALS STANDS OUT ONLY ON A PART OF THE SEISMOGRAMS. HOWEVER, MU AND D PRIME2 CAN BE FOUND IN THIS CASE AS WELL BY USING THE METHOD WHICH THE AUTHORS DESCRIBE. IN THOSE N CASES WHEN BOTH WAVES ARE DISCRIMINATED, THE PARAMETER BETA SUBI, THE RATIO OF THEIR AMPLITUDES, IS MEASURED; IN M CASES, WHEN ONE OF THEM DOES NOT STAND OUT AGAINST THE NOISE BACKGROUND, THE PARAMETER ALPHA SUBJ THE RATIO OF THE AMPLITUDE OF THE BACKGROUND TO THE AMPLITUDE OF THE DISCRIMINATED WAVE, IS DETERMINED.

UNCLASSIFIED

3/3 021 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0135262

ABSTRACT/EXTRACT--THE MU AND O PARAMETERS ARE DETERMINED USING THE FORMULA, SHOWN ON MICROFICHE, WHERE, FORMULA SHOWN ON MICROFICHE; C IS A NORMALIZED CONSTANT. THE MEAN RATIO OF ENERGY FLUX DENSITIES LAMBDA PRIME2 CAN BE FOUND USING THE FORMULA 2 PRIME2 EQUALS EXP 2 (MU PLUS O PRIME2 MINUS 2 O PRIME2 SUBP), WHERE O SUBP 2 IS THE DISPERSION OF THE LOGARITHM OF WAVE AMPLITUDE, GIVEN IN THE DENOMINATOR OF THE RATIO. THE PARAMETER O SUBP FOR THE LONGITUDINAL WAVE OF UNDERGROUND BURSTS WITH A FREQUENCY OF ABOUT 1 CPS IS ESTIMATED AT 0.3-0.4. THE STUDY WAS BASED ON ANALYSIS OF SEISMOGRAMS OF UNDERGROUND NUCLEAR BURSTS REGISTERED BY SEISMIC STATIONS IN THE USSR. FIGURE 1 SHOWS THE RESULTS OF MEASURING APP-A SUBP; FIG. 2 SHOWS THE FUNCTION (1) FOR DELTA EQUALS 23-37DEGREES. THE RESULTS SUGGEST THAT AT THE BOTTOM OF THE MANTLE THERE IS A ZONE WHICH IS QUITE INHOMOGENEOUS HORIZONTALLY. THE SCATTER OF AMPLITUDES CAN BE REGARDED AS AN INDEX OF THE DEGREE OF HORIZONTAL (LATERAL) INHOMOGENEITY OF THE MEDIUM. COMPARISON OF DATA ON THE SCATTER OF AMPLITUDES OF PP AND PCP WAVES INDICATES THAT THE HORIZONTAL INHOMOGENEITY IN THE CRUST AND UPPER MANTLE EXCEEDS THE DEGREE OF HORIZONTAL INHOMOGENEITY IN THE

FACILITY: INSTITUTE OF PHYSICS OF THE EARTH.

UNCLASSIFIED

USSR

UDC: 669.293.5

GULYAYEV, B. B., YAKOVLEV, V. T., VINNIK, P. G., MIKLUKHIN. D. Ye.

"Selection of Alloying Elements in the Development of Casting Alloys Based on Niobium"

Sb. Nauch. Tr. Tomsk. Inzh.-Stroit. In-t [Collected Scientific Works of Tomsk Institute of Construction Engineering], 1973, No 21, pp 3-11 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8I721, by L. Petrova).

Translation: A summarization is presented of existing state diagrams of binary systems of Nb-based alloys, and predictions are made for systems not studied. The analysis allows an estimation of the nature of the interaction of Nb with the elements and determination of their effects on increasing and decreasing the required properties of alloys being developed. 8 figures, 1 table, 9 biblio. refs.

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USSR

UDC 661.143

VINNIKOV, A. P., and GUGEL', B. M.

"Effect of Interchange on Luminescence of Manganese in Calcium Chloro-apatite and Fluoroapatite"

Sb. Nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Substances), 1971, vyp 6, pp 23-28 (from RZh-Khimiya, No 17, Oct 72, Abstract No 17L169)

Translation: The authors investigated the EPR line width characteristic of Mn^{2+} for the transition $M = 1/2 \rightleftharpoons -1/2$ and the emission spectra of manganese with cathodic excitation in calcium chloroapatite and fluoroapatite. The results show that with a concentration of ~1.0 wt.% manganese in calcium chloroapatite and calcium fluoroapatite, there is a reduction in line width in the EPR spectrum due to the Mn^{2+} interaction. The interaction leads to a reduction in the brightness of manganese fluorescence.

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USSR

UDC 621.382:538.632

ALEKSIDZE, M.A., BEZHANOV, V.G., VINNIKOV, I.L., SVANIDZE, L.V.

"Solution Of Some Boundary Problems During Calculation Of Resistance Of Hall Element"

Tr. In-t sistem upr. AN GruzSSR (Works Of The Institute Of Control Systems. Academy Of Sciences, Georgian SSR), 1971, 10, No 2, pp 47-57 (from RZ:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B364)

Translation: A calculation is made of the input and output resistance of a Hall element of right-angled form, the metal current electrodes of which have an ohmic non-injecting contact with a semiconductor wafer [plastina] over all of its length, and metal Hall electrodes -- the same contact with the middle of the lateral faces of this wafer. Both pairs of contacts are realized over the total thickness of the semiconductor wafer. The results are presented in the form of graphs which makes it possible to select (from the point of view of the maximum energy index of the Hall element) the optimum ratio for the sides of the semiconductor wafer and the dimensions of the Hall electrodes. Yu.P.

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USSR

VINNIKOV, I. L.

UDC 621.382:538.632

"Concerning The Dependence Of The Power Output Indices Of A Hall Element On Material"

Tr. In-t sistem upr. AN GruzSSR (Works Of The Institute Of Control Systems. Academy Of Sciences, Georgian SSR), 1971, 10, No 2, pp 32-46 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B363)

Translation: A theoretical study is made of the dependence of the output indices of Hall elements on material, for various operating conditions, with the following assumptions: the concentration of charge carriers in the material of the unit does not change in response to magnetic induction, and its resistivity changes inversely proportional to the mobility; the density of the control current is invariable with respect to the thickness of the wafer [plastina] of the element, and the wafer itself is homogeneous and isotropic. The following are used as output indices: output signal (current or voltage as a function of the circuit diagram); conversion factor of input signal or static sensitivity (ratio of output signal to input); utilization factor of input signal (ratio of output power at load resistance to output signal), and efficiency. Analytical expressions are obtained for these output indices with various operating conditions of the element, and usefulness factors are established with respect to these indices. Yu. P.

1/1

USSR

UDC 621.382:538.632

VINNIKOV, I.L.

"Electromagnetic System Of Hall Transducer"

Tr. in-t sistem upr. AN GruzSSR (Works Of The Institute Of Control Systems. Academy Of Sciences, Georgian SSR), 1971, 10, No 2, pp 66-80 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B365)

Translation: An electromagnetic system is considered, in the air gap of which a Hall transducer [datchik] is placed. Expressions are derived and studied for such characteristics of the electromagnetic system as the conversion ratio of the magnetizing force; the maximum realizable values of the magnetizing force and the induction in the air gap; the nonlinearity of the dependence of the inductance in the gap on the magnetizing force and their dependence on the dimensions of the gap and the design of the magnetic circuit. Recommendations are made with respect to a correct choice of the material and the design of the magnetic circuit and the total electromagnetic system of the Hall transducer. Yu.P.

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USSR

UDC 591.488.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDOVSKIY, V. I., GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z., MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P., KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional Morphology, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog Rana temporaria in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized Rana temporaria eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during

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VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

2/2

USSR

UDC: 611:613.693

VINNIKOV, YA.A. (Reviewer)

Voprosy Aviatsionnoy i Kosmicheskoy Anatomii (Aspects of Aviation and Space Anatomy), M.G. Prives, Editor, Publishing House of the First Leningrad Medical Institute imeni I.P. Pavlov, Leningrad, 266pp

Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, No 3, 1970, pp 116-117

Abstract: The book under review, a collection of articles dealing with the morphological effects of accelerations on the blood vessels at the systemic and organ levels, is considered a new and valuable contribution to space biology and medicine. The brain, heart, kidneys, ears, extremities, and endocrine glands are among the organs treated. A number of studies are devoted to training, the results of which suggest that it will eventually be possible to mitigate or even neutralize the effects of acceleration by carefully planned conditioning programs.

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1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INFLUENCE OF THE DEPTH OF THE INTERLAYER IONIZATION VALLEY ON THE HEIGHTS OF THE F REGION -U-

AUTHOR--VINNIKOVAGULYAYEVA, T.L.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 346-348

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--F LAYER, IONIZATION, IONIGRAM, LEAST SQUARE METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0161 STEP NO--UR/0203/70/010/002/0346/0348

CIRC ACCESSION NO--AP0119157

UNCLASSIFIED

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0119157 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A METHOD OF OBTAINING N(H) PROFILES FROM IONOGRAMS (FOR STUDYING IONOSPHERIC PROCESSES) WHICH GIVES THE TRUE SHAPE OF THE PROFILE WITH AN ACCURACY COMMENSURATE WITH THE AVAILABLE VIRTUAL HEIGHT DATA. THE METHOD IS BASED ON THE IDEA OF REPLACING NONMONOTIC INTERLAYER IONIZATION BY A LINEAR EQUIVALENT DISTRIBUTION, AND CALCULATING THE HEIGHT OF THE F REGION ON THE BASIS OF THE COMPLETE SET OF IONOGRAM DATA AND A PROPERLY SELECTED VALLEY SEPTH. MODEL CALCULATIONS OF N(H) PROFILES FOR DEEP AND SHALLOW IONIZATION VALLEYS BY THEMETHOD OF LEAST SQUARES ARE PRESENTED.

FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNOGO MAGNETIZMA, IONOSFERY I RASPROSTRANENIIA RADIOVOLN, KRASNAYA PAKHRA, USSR.

UNCLASSIFIED

USSR

UDC 621.396.67

LANDSMAN, M. S., VINNITSKAYA, D. N.

"The Short-Wave Tower of a Radio Center as a Medium-Wave Antenna"

Moscow, Radiotekhnika, Vol 26, No 9, Sep 71, pp 106-109

Abstract: The authors consider the possibility of using the towers carrying short-wave antennas at radio centers as the main antennas for medium wave transmission. The metal tower structures considered are typical steel units 65-110 meters in height between which cophasal horizontal dipoles are suspended. It is shown that the top-fed design is most feasible for this application. Formulas are derived for principal characteristics (impedances, currents and voltages), and the results are graphed and tabulated. A formula is presented for calculating the maximum power of the antenna, and it is shown that the antenna power can exceed that of the transmitter under completely realistic conditions. In conclusion the authors thank S. B. Mayorchik and V. F. Velikiy for designing the antenna and for assisting in measurement of its input impedance. Five figures, one table, bibliography of four titles.

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Acc. Nr AP0049343 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code 4R0365

106515y Protection of tungsten from high-temperature oxidation by nickel electroplating over a sublayer of chemically deposited palladium. Kvokova, L. M.; Vinnitskaya, N. S. (Mosk. Inst. Stali Splavov, Moscow, USSR). Zashch. Metal. 1970, 6(1), 79–80 (Russ). Coating W with chem. deposited Pd metal proceeds according to the equation: $2Pd(NH_3)_4^{2+} + N_2H_4 + 4OH^- \rightarrow 2Pd + 8NH_3 + N_2 + 4H_2O$ in a bath contg. $Pd(NH_3)_4Cl_2$ (wt. of metal) 4.3 g/l., concd. NH_4OH 370 ml/l., hydrazine sulfate 6 g/l., and Trilon B 35 g/l. Coatings of 0.8 to 10–15 μ give satisfactory decorative surfaces and are firmly bonded. However, because of their porosity (1.5–2 pores/cm² at 6 μ thickness), they must be electroplated with Ni to prevent oxidn. of the W at >700°. A 200 μ Ni layer over a 2.5 μ Pd coating remains stable for 25–27 hr at 1200°. In prepn. for Pd deposition, W was best cleaned in 15% NaOH and by passing a.c. of 30 A/dm² c.d. for 1–3.5 min at 40–80°. Nadia N. Trojan

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REEL/FRAME 19801160

USSR

UDC 612.821.2

IL'YUCHENOK, R. YU., and VINNITSKIY, I. N., Institute of Physiology of the Siberian Department, Academy of Sciences USSR, Novosibirsk

"The Effect of High-Frequency Stimulation of the Amygdaloid Complex on Memory in Rats"

Moscow, Zhurnal Vysshey Nernnoy Deyatel'nosti imeni I. P. Pavlova, Vol 21, Vyp 6, Nov/Dec 71, pp 1,220-1,222

Abstract: In view of the important role of the limbic system, especially the amygdaloid complex, in the formation of memory traces, it was decided to study the effect of direct stimulation of the basolateral nuclei of this complex. Accordingly, a passive avoidance reaction was developed in 33 control and 12 experimental rats, and then the latter were subjected to high-frequency stimulation of the amygdaloid complex. The conditioned response was present in 23 of the control rats after 1, 2, and 7 days, but in none of the experimental rats at any of these times. Retrograde amnesia, such as occurred here, has also been known to arise during convulsive activity of the neuronal structures of the amygdaloid complex and the sensorimotor and visual areas of the brain. This possibility was eliminated in the present case by a study of the bioelectric activity of these regions. Hence, high-frequency stimulation of the amygdaloid complex may be assumed to interfere with the regulatory

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USSR

IL'YUCHENOK, R. YU., and VINNITSKIY, I. M., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 21, Vyp 6, Nov/Dec 71, pp 1,220-1,222

Mechanisms of memory that are responsible for single-stage learning, probably by disrupting the consolidation of memory traces.

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USSR

VINNIKOV, Ya. A.

Tsitologicheskaya i Molekulyarnyye Osnovy Retseptsii (Cytological and Molecular Bases of Reception), Leningrad, "Nauka," 1971, 372 pp, 163 ill, bibliography 1377 entries

Translation: Annotation: In this book many years of research by the author and his colleagues on the problem of reception is synthesized. Original data and literature data pertaining to electron microscopy, cytochemistry, biochemistry and the electrophysiology of the organs of sight, taste, smell, hearing and balance, prove that the evolution of sensory organs in all living things on our planet is based on the receptor cell. It is equipped with a mobile antenna which is a biological sensor of information in definite types of energy in the environment. The transformation or coding of the energy of the stimulus into information is accomplished with the help of special protein molecules fixed in the plasma membrane of the antenna. The effect of the energy unit of the stimulus on the specific protein molecule, which in the process changes its conformation, is the very basis of the triggering (starting) mechanism of reception and the excitation of the receptor cells and transmission of information in the form of nerve impulses to the central nervous system.

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USSR

VINNIKOV, Ya. A., Tsitologicheskaya i Molekulyarnyye Osnovy Retseptsii, Leningrad, "Nauka," 1971, 372 pp, 163 ill, bibliography 1377 entries

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USSR

VINNIKOV, Ya. A., Tsitologicheskaya i Molekulyarnyye Osnovy Retseptsii, Leningrad, "Nauka," 1971, 372 pp, 163 ill, bibliography 1377 entries

USSR

VINNIKOV, Ya. A., Tsitologicheskaya i Molekulyarnyye Osnovy Retseptsii, Leningrad, "Nauka," 1971, 372 pp, 163 ill, bibliography 1377 entries

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USSR

VINNIKOV, Ya. A., Tsitologicheskaya i Molekulyarnyye Osnovy Retseptsii, Leningrad, "Nauka," 1971, 372 pp, 163 ill, bibliography 1377 entries

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VINNIKOV, Ya. A., Tsitologicheskaya i Molekulyarnyye Osnovy Retseptsii, Leningrad, "Nauka," 1971, 372 pp, 163 ill, bibliography 1377 entries

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USSR

UDC 615.37.033

GIGAURI, V. S., VINNITSKIY, L. I., and POPOVA, Ye. B., Scientific Research Institute of Clinical and Experimental Surgery, and First Moscow Medical Institute imeni I. M. Sechenov

"Agent Resorption Rate in Tissues After Needleless Injection"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 93-95

Abstract: The resorption rates of physiological solution labeled with Xe^{133} injected subcutaneously, intradermally, and intramuscularly with a BI-1 needleless injector and a conventional needle were compared. Resorption rates were about equal for both methods with intradermal injection, and the rates for the needleless injector were 1.7 times higher with subcutaneous injection and 3.6 times higher with intramuscular injection. X-ray studies revealed that the surface area of agent in contact with tissues is greater when administered with the needleless injector than with the conventional needle. It is suggested that this greater agent-tissue contact causes the faster resorption rate.

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1/2 043 UNCLASSIFIED

TITLE--NARROW LINE RUBY LASER -U- PROCESSING DATE--09OCT70

AUTHOR-(05)-VINOGIN, YU.P., GNATYUK, L.N., NIKASHIN, V.A., SAKHAROV, V.K., TARASOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(1), 168-70

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RUBY LASER, MULTISTAGE LASER, LASER EMISSION COHERENCE, LASER MODULATION, LASER PULSE, LASER POWER OUTPUT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0368 STEP NO--UR/0051/70/028/001/0168/0170

CIRC ACCESSION NO--AP0055153

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0055153

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO LASERS WERE USED IN THE SYSTEM OPERATING STABLY IN A SINGLE FREQUENCY REGION AND THE OTHER AN OUTPUT LASER WITH A PHOTOTROPIC SHUTTER, THE INITIAL ILLUMINATION OF WHICH IS PRODUCED BY THE RADIATION OF THE 1ST LASER. THE ACTIVE ELEMENT OF THE 1ST LASER WAS A HIGHLY UNIFORM RUBY CRYSTAL WITH SAPPHIRE CAPS 12 CM LONG AND 10 CM DIAM. THE QUALITY MODULATOR WAS A SOLN. OF PHTHALOCYANINE IN PHNO SUB2. SINGLE FREQUENCY OPERATION WAS MAINTAINED BY INCREASING THE PUMPING ENERGY 10PERCENT ABOVE THAT OF THE THRESHOLD. THE CRYSTAL OF THE 2ND LASER WAS 24 CM LONG AND 16 MM DIAM. THE SYSTEM USED CAN PRODUCE A POWERFUL SINGLE PULSERADIATION OF VERY NARROW SPECTRAL COMPN.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--A RUBY LASER WITH A NARROW EMISSION LINE -U-

AUTHOR-(05)-VINOGIN, YU.P., GNATYUK, L.N., NIKASHIN, V.A., SAKHAROV, V.K., TARASOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, JAN. 1970, P. 168-170

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RUBY LASER, LASER RADIATION, LASER EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1676

STEP NO--UR/0051/70/028/000/0168/0170

CIRC ACCESSION NO--AP0047994

UNCLASSIFIED

2/2 038 UNCLASSIFIED

CIRC ACCESSION NO--AP0047994 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE POSSIBILITY OF CREATING A SOURCE OF FAIRLY POWERFUL MONOPULSE RADIATION OF NARROW SPECTRAL COMPOSITION. TWO GENERATORS WERE USED IN THIS STUDY: THE FIRST STABLY OPERATING IN A SINGLE FREQUENCY REGIME (ONE TRANSVERSE AND ONE LONGITUDINAL MODE), WHILE THE SECOND, THE OUTPUT GENERATOR, IS A LASER WITH A PHOTOTROPIC U SWITCH, THE INITIAL BLEACHING OF WHICH OCCURS AS A RESULT OF THE RADIATION OF THE FIRST LASER.

UNCLASSIFIED

USSR

UDC 547.752

VINOGRAD, L. KH., SHALYGINA, O. D., BULATOVA, N. N., KOSTYUCHENKO, N. P., ZYKOVA, T. N., MIKERINA, A. L., ARUTYUNYAN, G. S., and SUVOROV, N. N., All-Union Scientific Research Chemical and Pharmacentical Institute imeni Sergo Ordzhonikidze, Moscow

"Indole Derivatives. Report 72. Addition of Sulfur-Containing Reagents to Nitrovinylindole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 12, Dec 71, pp 15-17

Abstract: The addition of sulfur-containing nucleophilic reagents to unsaturated nitro-compounds of the indole series was studied. The addition reactions of seven new indole derivatives are detailed and the addition products identified. In-vitro therapeutic tests revealed a weak germistatic activity (500-250 mcg/ml) in 1-benzylmercapto-1-(1'-acetylindolyl-3)-2-aminoethane chloralhydrate relative to 17 microorganism strains. The study included general effects, effects on smooth muscles, circulation and respiration body temperature, interaction with hexenal and iprazid, antihistaminic, antispasmodic and anesthetic effects. The compound revealed weak pharmacological activity, weak spasmogenic action and slightly increased capillary permeability. It appears to promote the somnifacient effect of hexenal. The LD_{50} in intravenous administration to mice is 45 mg/kg. (1 table, 1 biblio. reference)

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USSR

UDC 669.14.018.298'295:620.186.8

ZAGULYAYEVA, S. V., and VINOGRAD, M. I.

"Growth of Austenite Grains in Structural Steel Containing Titanium"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 40-42

Abstract: The growth kinetics of austenite grains in 15KhGNTA steel with titanium nitrides was studied. Since the presence of insoluble titanium nitrides particles in the steel prevents the formation of large austenite grains, an attempt was made to remove them by refining the steel in an open-hearth furnace (OH), in an electric arc furnace under vacuum (EAV), and with electroslag (ES) and electron beam (EB) methods. The amount of nitrides left in the steel after refining was 0.0953, 0.0525, 0.0551, and 0.0307% for the OH, EAV, ES, and EB methods, respectively. After the OH refining no growth of austenite grains in 15KhGNTA steel was observed at 850-950°C. A gradual appearance of grains was observed when the temperature reached 1050°C, and very active grain growth was observed at 1100°C. The growth kinetics of grains in the steel refined by the EAV and ES methods was similar to that of the OH refined steel. A quite different type of kinetics of grain growth was observed in the case of EB refining. At 950-1050°C a mixture of small

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ZAGULYAYEVA, S. V., and VINOGRAD, M. I., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 40-42

and large grains appeared; at 1100-1200°C the grains grew larger, and at temperatures above 1200°C an intensive increase in the grain size was evident. Although OH, EAV, and ES refining lowered the concentration of nitrides in the steel somewhat, it was not sufficient to eliminate their inhibiting effect on the growth of large grains. After the EB refining the number of nitride particles was low and they did not influence the motion of dislocations much; this resulted in active grain growth.

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USSR

UDC (083.74) 669.14

VINOGRAD, M. I., KISELEVA, S. A., PAVPEROVA, I. A., APOLOVNIKOVA, L. G., KOLYASNIKOVA, R. I. and BUSHINA, E. G.

"New Standard for Metallographic Determination of Nonmetallic Inclusions in Steel"

Moscow, Standarty i kachestvo, No 2, Feb 72, pp 28-30

Abstract: Described is the newly announced GOST 1778-70 for the metallographic determination of impurities in metals replacing GOST 1778-62, which, in addition to other drawbacks, was inadequate to determine reliably the difference in the degree of contamination between individual heats. The need for the new standard has also been prompted by new steelmaking methods and high-purity requirements on top-grade metals. Compared to similar foreign standards, the new GOST 1778-70 features the following advantages: a scale providing strict classification of inclusions by composition and covering a wider variety, including nitrides; a x200 magnification permitting more accurate rating of impurities in pure metal than the "IK" scale in the American ASTM E-45-63; an examination area of sections for the "Sh" method adopted as 400 ±50 mm^2 (the same area in ASTM E-45-63 is only 200 mm^2; the standard includes measuring and calculation systems (not available on foreign standards) some of which are suitable for determining impurities in both formed and cast metals;

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VINOGRAD, M. I., et al, Standarty i kachestvo, No 2, Feb 72, pp 28-30

detailed patterns for cutting test pieces for the greatest majority of metallurgical items (only a few are available on foreign standards). 2 tables, 6 bibliographic references)

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USSR

UDC 669.14.018.8:621.181.4

FAYVILEVICH, G. A., MEL'KUMOV, I. N., and VINOGRAD, M. I., TsNIIChERMET /Central Scientific Research Institute of Ferrous Metallurgy/, Elektrostal' (Electric Steel) Plant

"Structural Transformations in 1Kh15N5AM2 Steel During Heating and Cooling"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, 1971, pp 36-38

Abstract: The authors studied the structure of 1Kh15N5AM2 (EP310) steel in a high-temperature microscope during heating to 1300° C and cooling to room temperature. Steel containing 0.14% C, 14.6% Cr, 4.5% Ni, 2.4% Mo, 0.03% N, smelted in an open electric arc furnace and after electroslag refining, was used for the study. The microstructure was studied by the methods of standard light and color metallography. It was found that delta ferrite is formed during high-temperature heating of the steel, beginning at 1200° C for electric-arc smelted metal and at 1250° C for electroslag-refined metal. The delta phase develops in the form of round grains in the open electric-arc smelted steel, in the form of prisms or plates in the electroslag-refined

USSR

FAYVILEVICH, G. A., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, 1971, pp 36-38

metal. The difference in the character of delta ferrite formation during high-temperature heating is due to the fact that during the heating of open-smelting metal there is a more uniform process of delta ferrite formation as a result of the presence of delta ferrite nuclei in liquation sectors enriched with ferrite-forming elements, while in the electroslag-refined metal, owing to its great homogeneity, the delta ferrite appears along crystallographic planes of the austenite. The transformation of austenite to martensite in specimens cooled to room temperature after heating to 1300° C takes place in the same temperature range regardless of the smelting method, although the electroslag metal contains somewhat more martensite. This apparently is due to the large volume of metal with a uniform concentration of alloying elements, corresponding to axes of dendrites after electroslag refining.

S. S. KOL'BE and YU. I. SMIRNOV took part in the work, and the color etching was done by N. I. BUTNEVA.

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USSR

UDC 669.14.018.29:669.187

VINOGRAD, M. I., KISELEVA, S. A., FILIPPYCHEVA, M. M., and PAVLEROVA, L. A., TsNIICHM, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Non-Metallic Inclusions in ShKh15 Steel Remelted by Different Methods"

Moscow, Stal', No 10, Oct 70, pp 935-938

Translation: A comparative investigation was made of impurities in open electric melted ShKh15 steel and in three refining remelts: electric slag remelt (mass production, most advanced process, data from 1962 and later), vacuum arc remelt, and electron-arc remelt (experimental melting). Non-metallic inclusions of various types were used. The inclusions were estimated according to four methods: the GOST 801-60 scale, the ChMTU/TsNIIChM 235-60 scale, calculation of the dirty fields of vision (volumetric content, TsNIIChM method), and using a quantitative television microscope with a magnification of 1273. The first two methods of estimating the remelted metal, which possesses only insignificant quantities of small inclusions, are not demonstrative. Considerable improvement in the quality of metal was noted in all types of remelting and no remelting method was demonstrably better than the other. Double remelting (electric slag and vacuum arc remelting, electric slag and electron-arc remelting) resulted in the highest purity.

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Steels

USSR

UDC: 669.14.018.8

MEL'KUMOV, I.N., VINOGRAD, M.I., and KLYUYEV, M.M.

"Improving the Quality of High-Strength 1Kh15N5AM2 Stainless Steel"

Moscow, Stal', No 5, May 70, pp 460-463

Abstract: Studies were made of the effect of electroslag remelting on the macrostructure, contamination by nonmetallic inclusions, and mechanical properties of 1Kh15N5AM2 (also called brand EP310 or VNS-5) high-strength stainless steel of the intermediate austenite-martensite class. The steel has the following chemical composition (%): 0.11-0.16 C, $\leq$ 0.7 Si, $\leq$ 1.0 Mn, $\leq$ 0.020 S, $\leq$ 0.035 P, 14.0-15.5 Cr, 4.0-5.0 Ni, 2.3-2.8 Mo, and 0.05-0.10 N. Inclusions dropped threefold as the result of electroslag remelting. The denser and more uniform macrostructure and the absence of coarse clusters of nonmetallic inclusions prevent the formation of internal defects in forged pieces made of metal from electroslag remelting. The remelted metal is distinguished by uniformity and stability of mechanical properties along the entire section of the ingot, and has higher plasticity and ductility properties and considerably less anisotropy of mechanical properties at testing temperatures up to 500°C in comparison with metal obtained by open melting. The macrostructure and nonmetallic inclusions were investigated on cast and deformed specimens and the mechanical properties -- on deformed metal.

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USSR

MEL'KUMOV, I.N., et al, Stal', No 5, May 70, pp 460-463

The nonmetallic inclusions were determined according to the scale in the All-Union State Standard 1778-62, and the quantitative composition of the inclusions was determined by an electrochemical dissolution method using an acid electrolyte (HCl + KCl).

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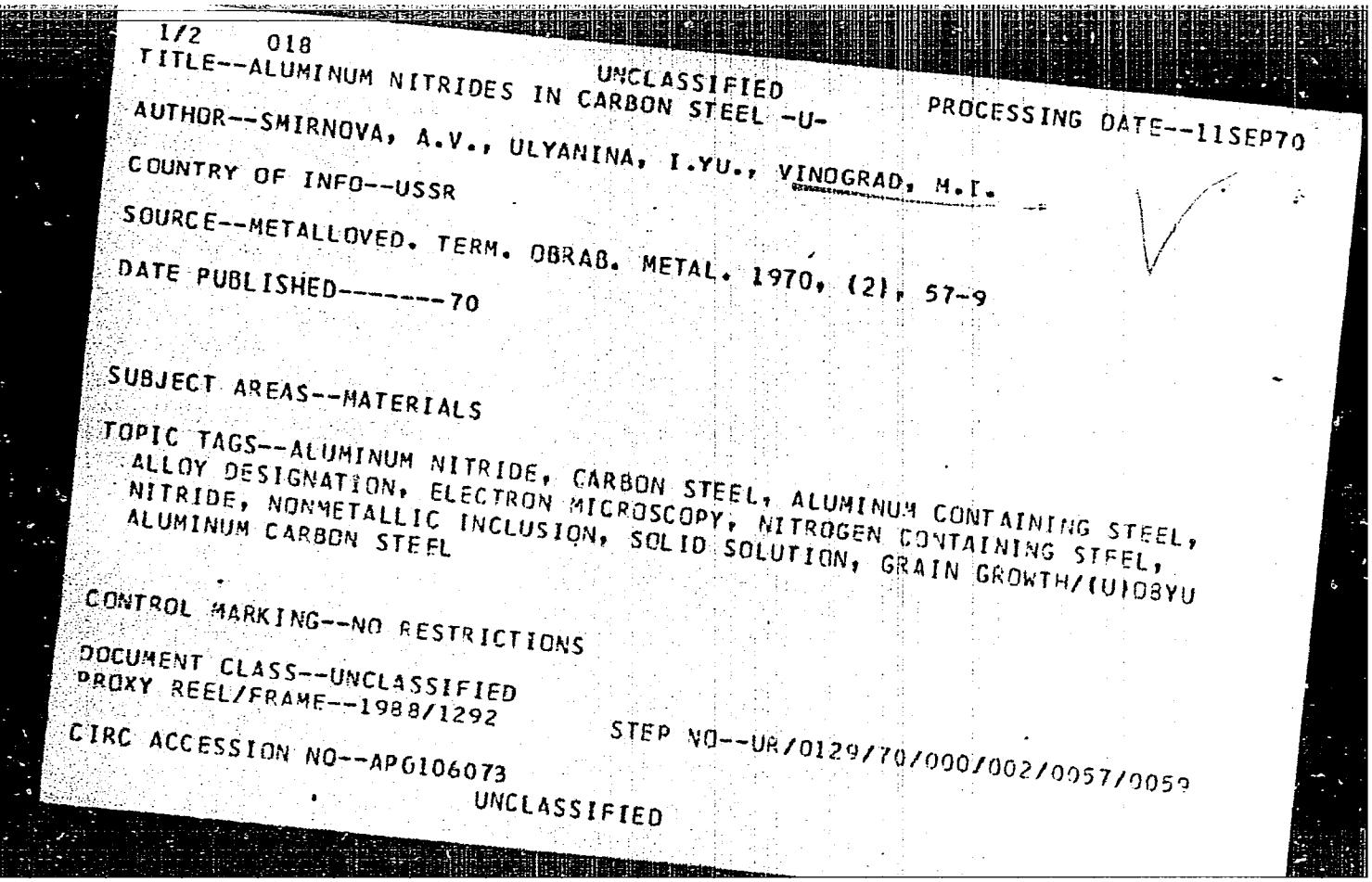

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--ALUMINUM NITRIDES IN CARBON STEEL -U-

AUTHOR--SMIRNOVA, A.V., ULYANINA, I.YU., VINOGRAD, M.I.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 57-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM NITRIDE, CARBON STEEL, ALUMINUM CONTAINING STEEL, ALLOY DESIGNATION, ELECTRON MICROSCOPY, NITROGEN CONTAINING STEEL, NITRIDE, NONMETALLIC INCLUSION, SOLID SOLUTION, GRAIN GROWTH/(U)08YU ALUMINUM CARBON STEEL

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ELECTRON MICROSCOPIC STUDY OF 08YU STEEL WITH VARIOUS CONCNS. OF AL AND N WAS USED TO DETN. THE SHAPE AND SIZE OF THE NITRIDE PHASE WITH DEPENDENCE ON HEAT TREATMENT, TO EXPOSE THEIR DISTRIBUTION IN THE BULK OF THE SOL. SOLN. AND THEIR CRYSTALLOGRAPHIC NATURE. THE DISPERSED AL NITRIDE INCLUSIONS HAVE PLATELET AND ROD SHAPES, THE LATTER OBSD. FOLLOWING ANNEALING. THE NITRIDE PHASES ARE LOCATED IN THE BULK OF FERRITE GRAINS AND HAVE A HEXAGONAL LATTICE WITH PARAMETERS A 3.11, C 3.98 ANGSTROM. THE INHOMOGENEOUS DISTRIBUTION OF THE NITRIDE PHASE IN THE BULK OF THE METAL, IS DUE TO THE STRONG GRAIN SIZE DIFFERENCE. IN THOSE PARTS WHERE AL NITRIDE IS SMALL, THE GRAINS ARE COARSE. DISSOLN. OF THE NITRIDE PHASE WITH INCREASING TEMP. PROMOTES THE GRAIN GROWTH OF AUSTENITE.

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VINOGRAD, M. I., GROMOVA, G. P.

"Inclusions in Alloyed Steels and Alloys"

Moscow, Vklyucheniya v legirovannykh stalyakh i splavakh, "Metallurgiya" Publishing House, 1971, 216 pp

Abstract: Methods for determining the composition and quantity of nonmetallic inclusions in steel are discussed and recommendations are made for applying these methods for steels smelted by various methods. The formation of oxides, sulfides, and nitrides in steel under various methods of smelting and refining are discussed. Data are presented that characterize the contamination of steel of various new methods by smelting by nonmetallic inclusions. Studies on the effect of nonmetallic inclusions on the hot plasticity of heat-resistant alloys are described. Measures to reduce the contamination of steel by inclusions are considered. The book is intended for scientific and engineering-technical workers of the metallurgical and machine building industries. It contains 98 illustrations, 43 tables, and a bibliography of 229 references.

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VINOGRAD, M. I. and GROMOVA, G. P., Vklyucheniya v legirovannykh stalyakh i splavakh, "Metallurgiya" Publishing House, 1971, 216 pp

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VINOGRAD, M. I. and GROMOVA, G. P., Vklyucheniya v legirovannykh stalyakh i splavakh, "Metallurgiya" Publishing House, 1971, 216 pp

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A70-25302 # Solution of the Liapunov problem of stability with respect to a first approximation (Reshenie zadachi Liapunova ob ustoichivosti po pervomu priblizheniiu). R. E. Vinograd (Moskovskii Gornyi Institut, Moscow, USSR), and N. A. Izobov. *Differentsial'nye Uravneniia*, vol. 6, Feb. 1970, p. 230-242. 7 refs. In Russian.

Development of an algorithm for constructing, from a Cauchy matrix, a first-approximation system for a central index of order m possessing the properties that the highest index of any perturbed system with an m-perturbation does not exceed the value of the central index, while the zero solution to this system is asymptotically stable for values of the central index less than zero. It is assumed that m-perturbations realizing the central index exist. In this study the term 'highest index of a perturbed system' is taken to mean a certain limiting value of the exact upper bound of a set of indices of solutions to the perturbed system, while the noncharacteristic number plus infinity is regarded as the index of a solution which cannot be continued indefinitely to the right. A.B.K.

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VINOGRAD-FINKEL', F. R., Prof, TERENT'YEVA, E. I., Prof, SUKHOVA, A. G., VOROB'YEVA, G. S., TAL'SKAYA, I. N., LIFLYANDSKIY, D. B., DOROFEYEVA, T. N., and SAMSONOVA, N. N., Central Institute of Hematology and Blood Transfusion (Prof A. Ye. Kiselev, Director), Ministry of Health USSR and Institute of Cardiovascular Surgery (Prof V. I. Burakovskiy, Director), Academy of Medical Sciences USSR (Moscow)

"Morphological and Biochemical Characteristics and Viability of Washed Erythrocytes Intended for Surgical Procedures With Extracorporeal Circulation"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 3-7

Abstract: Erythrocytes were obtained after separation of plasma from donor blood which had been kept in storage for 24 hours, washed with physiological solution, and examined by the electron microscope method; unwashed erthrocytes from the same blood served as controls. After two washings the submicroscopic organization of cells in the washed erythrocytes did not differ essentially from that in the unwashed erythrocytes. The conclusion

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VINOGRAD-FINKEL', F. R., et al., Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 3-7

was that washing the erythrocytes from blood prepared with a glucose-citrate preservative and stored for one day has no significant effect on the ultrastructure of almost the entire mass. Investigation of phosphorus fractions demonstrated the metabolic integrity of the washed erythrocytes through one or two washings. Thus, washing with physiological saline solution does not alter the structural completeness, metabolic activity, or biological value of erythrocytes. None of their indexes differ from those of erythrocytes of whole blood stored for 1 day and used for extracorporeal circulation in cardiac surgery; they should therefore be recommended as the basic component in perfusates for extracorporeal circulation.

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USSR

Hematology

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TERENT'YEVA, E. I., VINOGRAD-FINKEL', F. R., TALELENOVA, N. N., and KRUTIKOV, V. A., Cytology Laboratory and Laboratory of Blood Preservation, Central Institute of Hematology and Blood Transfusion, Ministry of Health USSR, Moscow

"Electron-Microscope Study of Erythrocytes of Whole Blood Rapidly Frozen in Liquid Nitrogen with Polyvinylpyrrolidone"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 4, 1970, pp 20-25

Abstract: It had been established that in freezing whole blood it is best to use concentrated solutions (50%) of polyvinylpyrrolidone (PVP) (1 part solution per five parts blood), because the amount of ice that is formed decreases and the damage to erythrocytes is reduced. It is advisable to retain the initial hematocrit value of the blood as far as possible. Use of a 50 percent solution of PVP in an 0.7 percent NaCl solution containing small amounts of glucose and Na citrate was recommended. Whole blood containing a protective solution of PVP was frozen rapidly at the temperature of liquid N_2 (-196°C) and stored at that temperature for 1 hr - 12 mos. Erythrocytes of the stored blood were examined under an electron microscope after 1 hr, 1 month, and 3, 6, and 12 months of storage. After 1 hr of storage, the ultrastructure of 84-85 percent of

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TERENT'YEVA, E. I., et al, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 4, 1970, pp 20-25

erythrocytes did not differ from that of erythrocytes in donor blood not treated with PVP or preserved by freezing. The ratio of erythrocytes with unchanged structure remained at the same level of approximately 85 percent until the end of the 12-month period of storage at -196°C.

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AUTHOR-(02)-VINOGRADFINKEL, F.R., KISELEV, A.YE.

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